6-2015

Mole Street Journal, June 2015

University of Arkansas, Fayetteville. Dept. of Chemistry and Biochemistry

UNIVERSITY OF ARKANSAS
J. WILLIAM FULBRIGHT COLLEGE OF ARTS & SCIENCES

The Mole Street Journal

Department of Chemistry and Biochemistry

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Special points of interest:

- Goldwater Scholarship awarded
- Professors Koeppe, Millett, and Striegler recognized
- Professor Davis recognized at retirement picnic
- Honors Student commencement speaker
- Graduation happenings

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Goldwater Scholarship Awarded to Chemistry Student

Armin Mortazavi, from White Hall, is an honors chemistry and physics double major and Bodenhamer Fellow in Fulbright College. He will receive a scholarship of up to $7,500 from the Barry Goldwater Scholarship Foundation for his senior year.

Mortazavi's success marks a landmark year for Goldwater Scholars at the University of Arkansas, as he is the 50th Goldwater Scholar overall, and his win marks the 20th consecutive year that at least one U of A student has been named a Goldwater Scholar.

Mortazavi is a member of the Honors College and an active member in Alpha Epsilon Delta, Celebrating Discovery, Honors College Ambassadors, and the Society of Physics Students. He was a recipient of a 2015 Statewide Undergraduate Research Fellowship. His research mentor is **Roger Koeppe**, a Distinguished Professor in the Department of Chemistry and Biochemistry. Mortazavi's research focuses on the stability and behavior of alpha-helical peptides.

"I am honored and pleased to be able to call myself a Goldwater Scholar," Mortazavi said. "I would not have been able to accomplish this feat without any of the mentorship and guidance I received along the way, especially from my research adviser Dr. Roger Koeppe. The interactions and experiences with other researchers that I have had at the University of Arkansas have been very valuable for me and integral for my development as a researcher. I am excited and hopeful for my future profession as a medical researcher so I can make a difference and bring about change."

Upon graduation, Mortazavi plans to pursue a medical degree and doctor of philosophy at a leading medical research university. He eventually hopes to teach and conduct research at a similar institution.

University of Arkansas News, May 26, 2015.

University Honors 15 Faculty and Staff Grant Recipients

The University of Arkansas recently honored its "Top 15 in 2015" class of research award recipients at a ceremony in the School of Law's Norma Lea Beasley Entrance Hall.

As a group, the 15 faculty and staff researchers accounted for nearly one-third of the University of Arkansas' total external research funding of $79 million in fiscal 2014. The $79 million figure represented a 24.8 percent increase over the previous fiscal year.

"Through your hard work and leadership in pursuing external research funding, you have helped move our research enterprise forward and enhanced the university's reputation as a comprehensive research institution," Sharon Gaber, provost and vice chancellor for academic affairs, told the group.

Jim Rankin, vice provost for research and economic development, said, "For most of these researchers, their funding came from multiple awards received throughout the year. They would be the first to mention that their co-investigators and their research teams are a large factor in their success."

The Department of Chemistry and Biochemistry was the only department to hold two recipients. **Roger E. Koeppe II**, Distinguished Professor of chemistry and biochemistry and **Frank Millett,** Distinguished Professor of chemistry and biochemistry are both to be congratulated.

(excerpts from the U of A News, April 28, 2015)

Faculty News

On the Go

The following research was presented at the 227th Electrochemical Society Meeting May 24-28 in Chicago, IL. In attendance but not presenting, were Mamello Mohale, Mahsa Lotfi-Marchoubeh, and Fahmida Afrose.

C.K. Nash, A. Claycomb, F. Khan, B.J. Jones, J. Hutcheson, T.J. Muldoon, and I. Fritsch. New Advances and Opportunities of Magnetohydrodynamic Microfluidics (Talk).

M. Hu and I. Fritsch. Redox Cycling Behavior of Catecholamines and Their Mixtures at Different Diffusion Distances: Steps Toward Quantitative speciation (Talk).

F. Kahn, D. Baucom, C.D. Heyes, and I. Fritsch. Studies Toward Lab-on-c-Chip Separations and Detection using Redox Magnetohydrodynamic Microfluidics (Poster presentation by F. Kahn).

B.J. Jones, C. Songer, P. Bare, and I. Fritsch. Conducting Polymers Covalently Linked to Enzymes and Mediators and Electropolymerized on Microelectrode Arrays (Poster presentation by B. Jones).

J.C. Moldenhauer and D.W. Paul. Instrumentation for Electrochemical Time of Flight Experiments (Poster presentation by J. Moldenhauer).

N. Halder and D.W. Paul. Effects of Oxygen Concentration on Glucose Sensor Response (Poster presentation by N. Halder).

M. Patrick and D.W. Paul. Effects of Biofouling on Oxygen Sensing Poly-o-Phenylenediamine-Coated Electrodes (Poster presentation by M. Patrick).

M.K. Reynolds and D.W. Paul. Determination of Diffusion Coefficients through a Polymer Membrane using a Rotating Disc Electrode (Poster presentation by M. Reynolds).

L. Mathurin, S. Chen, and **J. Chen.** Trimetallic Platinum-Ruthenium-Copper Nanotubes for Methanol Oxidation (Poster presentation by L. Mathurin).

Feng Wang gave an invited talk, "First Principle Solvation Free Energy of Monovalent Ions from Adaptive Force Matching," **Jicun Li and Feng Wang**, From Computational Biophysics to Systems Biology (CBSB), Oklahoma City, OK, May 17-19, 2015.

Kai Leong gave a talk at the CBSB conference, May 17-19, 2015 in Oklahoma City, OK entitled "Molecular Dynamics Investigation of Nanodroplets." He received a $200 award for the talk.

Colin Heyes gave two talks at the 249th ACS National Meeting, March 22-26, 2015, Denver CO. "Promoting binding of protein-targeting substrates by regulating interdomain dynamics within a signal recognition particle: Implications for Biotechnology" and "Careful control of confinement potential and interfacial lattice strain in colloidal quantum dots to improve radiative recombination and fluorescence blinking." Two of his students presented posters. **Collette Robinson and Colin Heyes**, Influence of shelling temperature and time on the optical and structural properties of ClnS2/ZnS quantum dots. **Pooja Bajwa, Feng Gao, Benard Omogo and Colin D. Heyes**, Multishells vs. gradient-alloyed shells on core quantum dots: Ensemble and single particle optical properties.

Colin Heyes presented a poster at the 59th Annual Meeting of the Biophysical Society, February 7-11, 2015, Baltimore, MD. Role of Structural Flexibility of cpSRP43 in Binding Substrates during Post-Translation Targeting. Authors are **Feng Gao, Alicia D. Kight, Rory C. Henderson, Srinivas Jayanthi, Parth Patel, Robyn L. Goforth, T.K.S. Kumar, Ralph L. Henry and Colin D. Heyes.**

Elizabeth Spahn gave a talk at the 249th ACS National Meeting, March 22-26, 2015, Denver CO. "Toward the reproducibility of CuI-PhEt hydrosilylations" in the Asymmetric Reactions and Syntheses session that she chaired.

Sarah Phillips presented "Toward side-selective modification of microdialysis sampling polyethersulfone (PES) membranes" at the 249th ACS National Meeting, March 22-26, 2015, Denver CO.

The following three posters were presented at the Society for Biomaterials Meeting, April 2015, Charlotte NC.

Kamel Alkhatib, Geoffrey D. Keeler, Tina Poseno, Jeannine M. Durdik, **Julie A. Stenken**. In Vivo Effect of Locally-Delivered Modulators on Cytokine Production and Macrohage Activation. Kamel Alkhatib, presenting.

Geetika Bajpai, Jeannine M. Durdik, and **Julie A. Stenken**. M (IL-4) and M(IL-10) Induced alterations in Gene and Protein Profiles of Rodent Wound Macrophages. Julie Stenken, presenting.

Geoffrey D. Keeler, Jeannine M. Durdik, and **Julie A. Stenken.** In Vivo Macrophage Activation via Locally Delivered Dexamethasone. Julie Stenken, presenting.

Publications

David W. Paul and Julie A. Stenken, A review of flux considerations for *in vivo* neurochemical measurements. *Analyst*, 2015, 140, 3709-3730. This work is offered in honor and memory of two individuals at the University of Kansas who strongly influenced the field of in vivo chemical analysis - Profesors Ralph (Buzz) Adams (1924-2002) and Craig Lunte (1957-2015). Their work and inspiration lives in the minds of many contributors to the field of in vivo chemical analysis.

Jayanthi, S., J. Morris, B. Kachel, M. Al-Ameer, R. Henderson, P.D. Adams, T.K.S. Kumar. (2015) The versatility of Isothermal Titration Calorimetry in Modern Biology. J. Anal. Bioanal.

(*publications are continued on page 3)*

From the Chair - *Wesley Stites*

Congratulations are due to graduating senior, **Sarah Mayfield**. Chemistry majors are really good students. We tell everybody that, but now we can support it with even more data. Sarah Mayfield is a chemistry major, but we lent her to Andy Proctor of the Food Science Department for her honors thesis work. Sarah's thesis just won the Outstanding Thesis Award for all of Bumpers College of Agricultural, Food and Life Sciences. That is fantastic news for Sarah and, of course, a warning to other colleges and departments who let our majors slip in to their competitions. Those chemistry majors will walk off with your awards.

Elsewhere in this month's Mole we list out Honors graduates. We somewhat take for granted the vibrant health of the department's honors program. But just how good are our chemistry majors? At the 2015 Fulbright Honors graduation, nearly half of our majors earned either departmental or college honors, almost certainly the highest percentage of any department in the entire University. The entire College of Arts and Sciences had 127 honors graduates. Thirty, 23.6%, were our majors. 40.4% of those graduating summa cum laude from the entire College were graduates of this single department. Of course, we are proud of our students, but I am also proud of our faculty. To produce this many honors graduates requires real effort; an effort that few other departmental faculties are called to do. Congratulations to all!

New Instructor Hired

Pamela Hill earned her Ph.D. in Inorganic Chemistry from Kansas State University and then worked as a Postdoctoral Research Associate at the University of Florida, all the while developing a keen interest in chemical education. She has also worked in information science at Chemical Abstracts Service in Columbus, Ohio. Pamela is originally from southeastern North Carolina and loves to write and garden in her spare time. She's currently building her own off-the-grid straw bale house in Madison County.

Pamela is teaching Chemistry II lecture this summer. Her office is located in CHEM 104 and her email is plhill@uark.edu.

(*Publications continued from page 2)*

Tech., Accepted for publication (http://dx.doi.org/10.4172/2155-9872.1000e121).

Arajaje, E.O., **S. Jayanthi**, **T.K.S. Kumar**, Y.J. Wang. (2015) Linear starch and hexanoic acid complexation evaluated by isothermal titration calorimetry. Starch, 67, 1-8.

Gao, F., A.D. Kight, R. Henderson, S. Janathi, P. Patel, M. Murchison, P. Sharma, R.L. Goforth, **T.K.S. Kumar**, R.L. Henry, **C. Heyes** (2015) cpSRP54 regulates inter-domain dynamics of cpSRP43 to promote binding of protein targeting substrates. Accepted for publication in J. Biol. Chem., doi/10.1074/jbc.M114.624356.

Geoffrey D. Keeler, Jeannine M. Durdik, **Julie A. Stenken.** Effects of Delayed Delivery of Dexamethasone-21-Phosphate via Subcutaneous Microdialysis Implants on Macrophage Activation in Rats. *Acta Biomaterialia* DOI: 10.1016/j.actbio.2015.05.011

NSF CAREER Summer Workshop

Professor **Colin Heyes** held a 2-week NSF CAREER summer workshop from May 11th to the 22nd. Students from Philander Smith College, Arkansas Baptist College, Shorter University, Arkansas Tech, and Northeastern State University attended.

Back row, left to right: John Bentley (Philander Smith), David Johnson (Arkansas Baptist College), Abraham Prince (Arkansas Baptist College), Steven Adams (Philander Smith), Jonathan Billings (Arkansas Tech), and Malik Austin (Shorter College).

Front row, left to right: **Colin Heyes**, Kassandra Cendejas (Arkansas Tech), Kamisha Adams (Shorter College), and Lauren Thompson (Northeastern State University).

Hayeses Announce Retirement

David and Victoria Hayes have been married for 48 years this coming August. Their first home was here in Fayetteville (Gregg & Dickson) when David was attending the University of Arkansas. He received his BS in Chemistry in 1969. He attended Murray State University where he received his MS (Chemistry) in 1971.

David took a teaching position with Three Rivers Community College (Missouri) from 1971- 1975. He then began a 30 year career with International Paper Company where he served in various supervisory/managerial positions in Pine Bluff, Mobile, and Cincinnati. During this time he continued to teach chemistry classes/labs as an adjunct instructor at Faulkner State in Alabama and the University of Cincinnati in Ohio.

David and Victoria have 6 children and 5 grandchildren. Victoria homeschooled the last four children from Pre-K through high school graduation. Also being a stay-at-home mom, and with much support and help from David and their children, she fostered 32 newborn infants until the babies could be placed in adoptive homes. Victoria and son, Patrick, have volunteered for many years in nursing homes and the church food pantry. Patrick is a big Hog fan as well as an extremely faithful band supporter. He plays several instruments – keyboard, drums, harmonica (his best instrument).

Coming back to Fayetteville and serving as Lab Coordinator has brought the family full circle. David, Victoria, and Patrick will continue to live in Fayetteville. They will take care of their two youngest grandchildren as well as find time to visit their other children and grandchildren in Ohio and Alabama. David plans to finally have the time to enjoy family, fish, and work on home projects.

When asked about David's retirement, Chris Mazzanti reflected, "Working closely with David Hayes over the years has been a pleasure. He has always been focused on students and safety, as anyone who has worked with him knows. I know that when he arrived on campus and started changing things to fit his style people were not always receptive of the changes but as we saw and understood what David wanted to accomplish we became believers that he will leave the department and more specifically the teaching labs a better place than he found them. Graduate students (including former students) that worked with him get this, as it is one of 'David's Three Laws' posted on the prep room door. David and I have spent many hours working closely together to insure that the labs are adequate and are not wasteful, to use his on words 'I spend the University's money like it is mine.' I guess what I am trying to say is that I will miss David and Ms. Victoria being in his office every day but I am also proud that I got to be a part of their world for a little while."

Retiring UA Chemistry Professor Dan Davis Honored at Departmental Picnic

Professor **Dan Davis** retired May 10, 2015. To honor his many years of service with the department, a retirement luncheon was hosted at The Gardens on the U of A campus May 1, 2015. **Bill Durham** surprised him with a cake creation, pictured below. The left side represented research, the right side represented teaching, and the center was an administrative black hole, which absorbed it all.

RESOLUTION from the Board of Trustees

WHEREAS, Dr. **Dan J Davis**, Professor of Chemistry and Biochemistry in the Fulbright College of Arts and Sciences, University of Arkansas, Fayetteville has expressed his intention to retire effective the end of the Spring 2015 semester, and

WHEREAS, Dr. Davis earned his B.S. from Rose-Hulman Institute of Technology in Chemistry in 1971 and his Ph.D. in Biochemistry from Ohio State University in 1975, and

WHEREAS, Dr. Davis served as a National Institutes of Health Postdoctoral Fellow and Instructor in the Department of Biological Sciences at Indiana University from 1975 to 1979, and

WHEREAS, Dr. Davis joined the Department of Chemistry and Biochemistry at the University of Arkansas in 1979 as an Assistant Professor, was promoted to Associate Professor in 1984, and to Professor in 1990, and

WHEREAS, Dr. Davis has served a leadership role in the Department of Chemistry and Biochemistry, serving as Vice Chairman from 1990-91 and 2011-2013 and Chairman from 1991-1998 and 2013-2014, in the latter case guiding the Department through the difficult aftermath of the sudden passing of the Chair, and

WHEREAS, Dr. Davis also served as Chairman of the Department of Biological Sciences from 2002-2004 and aided in the consolidation of that department from three previously independent departments, and

WHEREAS, Dr. Davis has enjoyed an impressive career in the field of biochemistry and has spent 36 years of exemplary teaching at both the undergraduate and graduate level and conducting research that resulted the training numerous undergraduate students and 5 M.S. and 8 Ph.D. recipients and in over 46 publications in peer-reviewed journals, and

WHEREAS, Dr. Davis was the recipient of the Alumni Association Distinguished Faculty Service Award in Teaching and Research in 1987 and the Fulbright College of Arts and Sciences Master Teacher Award in 1990, was a Charter Member of the University Teaching Academy upon its establishment in 1988, and

WHEREAS, Dr. Davis received almost $2,000,000 in external funding to support research, teaching, and infrastructure improvement in the Department of Chemistry and Biochemistry, and

WHEREAS, Dr. Davis also championed the concept of interdisciplinary studies on the Fayetteville campus, being one of the founders of the interdisciplinary graduate program in Cell and molecular Biology and serving as Chairman of its Program Advisory Committee until 2014, serving as a member of the faculty of the interdisciplinary graduate program in Space and Planetary Sciences where he taught a course in Molecular Evolution, and, most recently, leading efforts to create an undergraduate Interdisciplinary Studies major in the Fulbright College of Arts and Sciences, and

WHEREAS, Dr. Davis has served selflessly the Department, College, and University throughout his career,

NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF TRUSTEES OF THE UNIVERSITY OF ARKANSAS THAT the Board bestows upon Dr. Dan J Davis the title of Professor Emeritus of Chemistry, effective May 11, 2015, and grants him certain rights and privileges as extended to emeritus faculty by the Fayetteville campus and the University of Arkansas System.

FURTHERMORE, the Board directs that this resolution shall spread upon the minutes of this meeting, and a copy shall be provided to Dr. Davis.

University Salutes Faculty and Staff Researchers

As part of its Faculty Award Recognition Program, the University of Arkansas saluted faculty and staff who have received nationally competitive research awards at a reception on April 27, 2015 at the Frank Broyles Athletic Center.

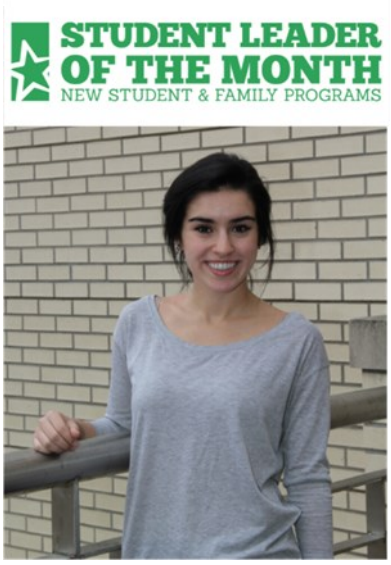
The university frequently honors faculty members who receive awards at the institutional, college, or departmental level. The award recognition program is te institution's first coordinated effort to publicly praise those who have received nationally competitive research awards.

The program initially focuses on the 23 faculty award programs recognized by the Top American Research Universities study conducted by Arizona State University. Examples include the Fulbright American Scholar Program, the National Endowment for the Humanities and the National Science Foundation Early CAREER award.

Located in the center of the back row of the picture above is Professor **Susanne Striegler**. She was the recipient of the National Science Foundation Faculty Early Career Development Program award. Susanne joined the department in the summer of 2012 as an Associate Professor, after 9 years at Auburn University. Her current research efforts are centered on the synthesis and design of functional enzyme models based on molecular recognition between immobilized metal complexes and biomolecules, particularly carbohydrates.

Kristen Kent Selected as March's Student Leader of the Month

Junior **Kristen Kent** has been selected as the March Student Leader of the Month. Originally from White Hall, Kristen came to the University of Arkansas to major in biochemistry and anthropology. She is currently president of Gamma Beta Phi, membership chair of the Mortar Board, serves on the Honors College Service Committee, and a member of Alpha Epsilon Delta.



When asked why she became involved in these organizations, Kristen replied, "These organizations, in particular, are very important to me because they represent a way for me to not only be involved and make an impact on campus, but also an avenue through which I can serve the community. Volunteerism has always played a central role in my life, even from a very young age. Nothing is more fulfilling for me than being able to advocate for others needs and give back. "This dedication to others explains why Kristen's favorite quote by Suetonius, in The Lives of the Twelve Caesars, states, "On reflecting at dinner that he had done nothing to help anybody all day, he uttered these memorable and praiseworthy words: 'Friends, I have lost a day.'"

According to Kristen, the most important quality of a leader is empathy. She states, "Although many people have the intelligence and organization crucial to being a leader, I believe it really takes someone with empathy to be considered a 'good' leader. Someone who is down-to-earth and relatable will be far more effective in leading a group when compared to another who may appear to be overly confident or arrogant. By putting the members first and sympathizing with their needs and vision for the organization, a leader immediately becomes far more influential because they are no longer striving for their own self-interests, but for those of every single other person in the room."

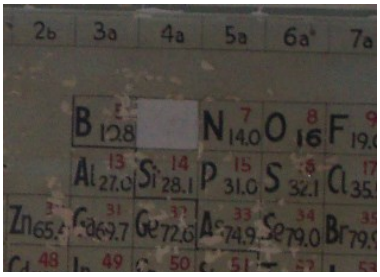
The Student Leader of the Month award, sponsored by New Student & Family Programs, recognizes University of Arkansas undergraduate students for their excellence in leadership through campus involvement, leadership activities, or through volunteer and community service. More information about the award can be found at leadership.uark.edu. University of Arkansas News, April 7, 2015.

Alumni Update

Our Alumni News has stacked up thanks to your great response to our request. Keep sending your personal news and stories of your time here and we will keep printing them!

After circa 25 years, Dr. **Brian Harrod** recently retired from Albemarle Corporation, serving as Process Technology Advisor in the Specialty Chemicals Division at its Magnolia, Arkansas facility. This involved lab scale syntheses, analyses, and technical evaluations to support the commercial scale production of elemental bromine and organobromine compounds, including some flame retardants. Currently, Brian continues to provide technical support to Albemarle Corp. on a part-time consultancy basis. He completed his Ph.D. in organic chemistry at the U of A in 1990, under the direction of Dr. **Norbert Pienta**. His wife, Dr. **Ellen Friday**, is a technical director at the Feist-Weiller Cancer Center at the LSU Health Sciences Center in Shreveport, Louisiana. At the U of A, she completed her Ph. D. in biochemistry under the direction of Prof. **Roger Koeppe**. Brian and Ellen reside in Minden, Louisiana.

We heard from **Jerry Smith**, who wrote to say, "I did my research with **Sam Siegel** and just happened to visit with him the day before he died. Now my wife and I come to Fayetteville often because our daughter and her family have a home there. Her business is Mitchell Communications in the old movie theatre where I took my wife on our first date." (If you haven't been to Fayetteville lately, check out the movie theatre sign on Dickson. It was just restored and looks brand new.) He continues, "I learned to avoid caves after a cave exploration expedition orchestrated by Kurt Stern. It turns out that it's always dark in caves, and the chiggers get you when you get out and walk across the field to the car. I don't remember Kurt blowing anything up but I had a high pressure hydrogenation reactor explode once. Attracted a lot of attention. The old lecture hall is familiar, of course. In those days inorganic chemistry was nuclear chemistry and that's changed too."



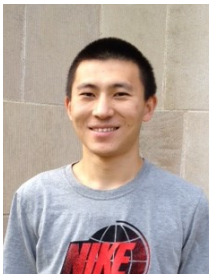
That is a great segue into the answer to the question we posed last time. What happened to the carbon missing in the periodic table revealed in the large lecture hall when the fancy illuminated one was removed? **Glen Akridge** responded, "The story I heard was that **Wally Cordes**, being an inorganic chemist, had once removed removed carbon from the large periodic table." That certainly rings true for anybody who remembers Wally and whether it's true or not, it should be true. Thanks for letting us know!

We also heard from **Larry Davis**. He tells us "In 1971 I graduated with a BA degree in Chemistry at Arkansas. Then I spent a year working on my Masters Degree and student teaching (General Chemistry Lab). Dr. **Lester Howick** was very instrumental in my chemistry education. He was a great professor and a great person who I will always remember as a good friend. I believe that Dr. Wally Cordes taught me also. After my first year of grad school, I was accepted to the University of Tennessee Dental School. I graduated from dental school in December, 1975. Since that time, I have practiced dentistry in Ashdown, AR, which is also where I was raised. I still practice 3 days a week. I have 2 daughters and 1 son, all attended the U of A, and am still married to Peggy after 45 years. Peggy also attended the University of Arkansas. Since one of my daughters lives in Fayetteville, I spend a good deal of time there. I would love to come by for a visit sometime and see all the new things in the Chemistry Dept."

Larry and Jerry, you or any of our alumni and friends are always welcome when you are in Fayetteville! Please come by the departmental office to chat or just wander the halls as you wish.

Students Pass 7th CUME

Jessica Pickens entered the program in the fall of 2014. She received her B.S. from the University of Arkansas at Fort Smith. Her advisor is **Susanne Striegler.**



Qile Wang entered the Program in the fall of 2014. He received his B.S. from Sun-Yat-Sen University in Guangzhou China. His advisor is **Nan Zheng**.

A Note of Thanks

Dr. Stites,

Just a quick note to thank you and all of Gage's fellow students and advisors for the kind words and cards sent to us. Thank you especially to those who took the time to attend his memorial service.

As a parent, one works for 18 years to produce and send out into the world an individual like you all have described. We were so proud of Gage and it's good to know he was a hard worker and good friend. Please know you have helped make this difficult time a little easier.

Warmest regards,
Barbara and Gary Coltrain

Student News

Guillory and Hudnall Named 2015 Arkansas Alumni Association Senior Honor Citation Winners

Kelly Hudnall of Rogers and **Kyle "Ranger" Guillory** of Hot Springs received the 2015 Senior Honor Citation during the Arkansas Alumni Association's first Cardinal & White Banquet at the Janelle Y. Hembree Alumni House.

In addition to announcing the Senior Honor Citation winners, the 2015 Razorback Classics were individually recognized. The Senior Honor Citation winners receive a life membership in the Arkansas Alumni Association and permanent recognition on a plaque at the Alumni House. All of the Razorback Classics also were presented a customized Old Main print from Kings River Fine Arts.

Guillory, an Honors College student majoring in chemistry, has served as chief justice of the Associated Student Government Judiciary Board, treasurer of the Arkansas Booster Club and a member of Beta Theta Pi Fraternity. He plans to start medical school in the fall to become an otolaryngologist.

He has had several hands-on experiences in the medical field, ranging from volunteering in Fayetteville and abroad, studying and traveling abroad, and undergraduate research. Through the Honors College, he studied the healthcare systems in the United States and Sweden, after which he traveled to Paris, France, for fun. He has also served an underprivileged community in Honduras through the Global Medical Brigades, a registered student organization. His Honors advisor was Dr. **T.K.S Kumar.**

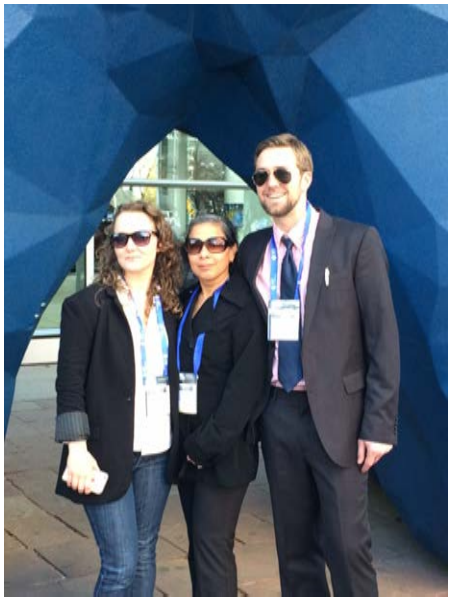
(excerpts from the U of A News, May 1, 2015)

Faculty and Students Attend 249th ACS Meeting in Denver, CO

This year's ACS meeting in Denver was well represented by the department. Posters and oral presentations are listed on page two. In attendance were Dr. **Colin Heyes, Samir Jenkins, Leanne Mathurin, Cameron Crane, Valerie McKinney, Randee McBride, Sarah Phillips, Latisha Puckett, Pooja Bajwa, Barry Sharp, Brian Walker, and Juliette Rivero-Castro.** Some photos of the trip are below.

Left: Valerie McKinney and Sarah Phillips like dining in style.

Right: Elizabeth Spahn found a real, live mole.



Above: Elizabeth Spahn, Juliette Rivero-Castro, and Barry Sharp enjoying the sights around Denver.

May 8, 2015 Honors Commencement

In 1955, the Honors Program at the University of Arkansas was founded by Harold Hantz, Professor of Philosophy, and Ben Kimpel, Professor of English. Harold Hantz was involved with the Honors Program in Fulbright College until his death, providing his unique vision, clear perspective, and unwavering commitment. The Hantz legacy continues today with all of our graduating seniors and their thesis directors. Students may participate in the Fulbright Honors Program in one of two ways: College Scholars or Departmental Scholars. Every year, the top graduate in each honors track is recognized through an endowment from the Hantz Family.

Harold D. Hantz College Scholars Award – Students are asked to take most of their core courses at the honors level (including upper-level colloquia), meet all departmental requirements, and write and defend an honors thesis.

Harold D. Hantz Departmental Scholars Award – Students must complete honors courses, satisfy all departmental requirements, and write and defend an honors thesis.

The Department of Chemistry and Biochemistry is proud to claim the recipients for both awards.

Emily Jacobson, winner of the Harold D. Hantz College Scholars Award
Clinton Peter, winner of the Harold D. Hantz Departmental Scholars Award

College Scholars:

Pilar Bare, cum laude, Immobilization of Electrochemical Mediators to Derivatives of a Conducting Polymer; Toward the Development of Biofuel Cells. Mentor – **Ingrid Fritsch**
Caroline Chen, summa cum laude, The Activity of Novel Antifungal Peptides against Candida Species. Mentor – David McNabb
Phillip Cowan, cum laude, Methanogen Metabolism in the Presence of Iron Compounds: A Martian Environment Simulation. Mentor – Tim Kral
Charles Fenwick, summa cum laude, The Effect of Volatile Amines on Cyanocrylate Poilymerization in Latent Fingerprint Development. Mentor – **Wesley Stites**
Kyle Guillory, summa cum laude, The Use of Rubredoxin as an Affinity Tag for Overexpression of Recombinant Proteins and Peptides. Mentor – **T.K.S. Kumar**
Emily Jacobson, summa cum laude, Additional Sex Combs-Like 2 (ASXL2): A Psychological Stress-related Gene in a Chicken Stress Model. Mentor – Wayne Kuenzel
Sushanth Kumar, summa cum laude, Is the Refolding of Lysozyme Template Driven? Mentor – **T.K.S. Kumar**
Amanda Lowe, summa cum laude, Effects of Central Residue Substitutions of Lactoferricin Peptides on Antimicrobial Activity and Membrane Interactions. Mentor – **Denise Greathouse**
Padmavathy Manavazhahan, summa cum laude, Optimized Incorporation of an Extrinsic Fluorescence Reporter Group to Characterize Protein Interactions of Rheb. Mentor – **Paul Adams**
Patrick Naeger, summa cum laude, Percent Recovery of Various Analytes using a Wick Method. Mentor – **Julie Stenken**
Taylor Needham, magna cum laude, Efforts in Increasing Microdialysis Recovery Rates Utilizing Bidirectional Flow Capability. Mentor – **Julie Stenken**
Akash Patel, summa cum laude, Chymotrypsin Digestion Analysis to Characterize Site-Specific Incorporation of an Extrinsic Fluorophore Probe on a Ras Related Protein. Mentor – **Paul Adams**
Tyler Petree, cum laude, Characterization of RAS Family Protein Cdc42 in the Presence of a Small Target Molecule. Mentor – **Paul Adams**
Bonnie Ramsey, magna cum laude, Synthesis and Characterization of Racemic and chiral Asymmetric Binuclear Copper (II) Complexes. Mentor – **Susanne Striegler**
Rachel Rogers, cum laude, Developing Graphene-Based Supercapacitors for High Temperature Applications. Mentor – **Ryan Tian**
Jes Sanders, summa cum laude, Characterization of the Targeting Mechanism of Costridium histolyticum ColH Collagen-Binding Domain towards Collagen Fibril. Mentor – **Joshua Sakon**
Corrine Songer, summa cum laude, Derivatives of 3,4-Ethylenedioxythiophene (EDOT) for Enzyme-immobilized conducting Polymer: Toward Development of Biofuel Cells and Biosensors. Mentor – **Ingrid Fritsch**
Vasupradha Suresh Kumar, summa cum laude, Influence of a Potentially Destabilizing Central Tryptophan on Transmembrane Helix Domains. Mentor – **Roger Koeppe**

Departmental Scholars:

Nicholas Baioni, magna cum laude, Development toward Fluorescence Imaging of Microdialysis Sampling Diffusion Profiles. Mentor – **Julie Stenken**
Matthew Bradley, magna cum laude, Molecular Modeling of Vasotocin II Receptor (VT2R) and Docking of Potential Agonist and Antagonist. Mentor – **T.K.S. Kumar**
Amanda Degner, cum laude, Reactions of N-acetyl-p-benzoquinone imine with Amino Acids and Peptides. Mentor – **Wesley Stites**
Michael Elkins, magna cum laude, Increased Microdialysis Recovery of Large Molecular Weight Analytes via Ultrafiltration. Mentor – **Julie Stenken**
Matthew Faubion, summa cum laude, Evaluating N-benzylgalactonoamidines as inhibitors of β-glucosidase from almonds. Mentor – **Susanne Striegler**
Hallie Hughes, cum laude, Synthesis of Asymmetric Binuclear Copper (II) Complexes and Evaluation of Disaccharide Hydrolysis. Mentor – **Susanne Striegler**
Clinton Peter, summa cum laude, Determination of the Binding Sequence of Bovine Type I Collagen and s3b Collagen Binding Domain from Clostridium Histolyticum (ColG) Culaganase. Mentor – **Joshua Sakon**
Margaret Power, summa cum laude, Design of Heparin Based Antimicrobial Peptide Based on the Heparin Binding Segment of FGF-1. Mentor – **T.K.S. Kumar**
Lindsey Rasmussen, magna cum laude, Identification of Polymers Present in Clear Tape Adhesives Using Matrix Assisted Laser Desorption/Ionization-Time of Flight-Mass Spectrometry. Mentor – **Charles Wilkins**
Jesse Roberts, cum laude, The Use of Peptoids to Help Prevent Proteolysis of Biotherapeutics. Mentor – Shannon Servoss
Nick Timmerwilke, summa cum laude, Molecular Modeling of Fibroblast Growth Factor Receptor (FGFR). Mentor - **T.K.S. Kumar**
Dawn Weir, summa cum ladue, Molecular Mechanism of Tandem CBD of Clostridium Histolyticum. Mentor - **Joshua Sakon**

Left to right: Jes Sanders, Dawn Weir, Clinton Peter

Spring Commencement

Commencement services for the J. William Fulbright College of Arts and Sciences were held at 1 p.m. on Saturday, May 9, 2015 in Bud Walton Arena. **Padmavathy Manavazhahan**, who received her Bachelor of Science in chemistry and biochemistry, with minors in gender studies, classical studies, and medieval and Renaissance studies, was the student commencement speaker.

Kolawole Ayinuola and Dr. Matthias McIntosh

Congratulations!

Not pictured are Geoffrey Keeler (CeMB), Sefat Alwarsh (PhD), and Haibin Wu (MS)

Randee McBride, Valerie McKinney, and Samir Jenkins

Ashley Howard and Dr. Colin Heyes

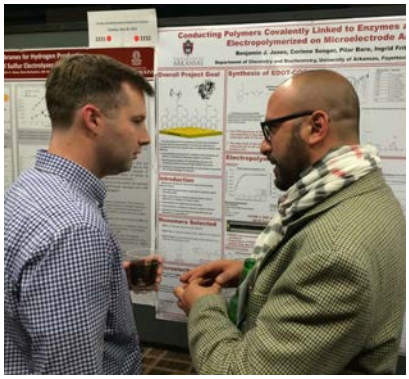
Collette Robinson, Dr. Colin Heyes, and Randee McBride

Mengjia Hu and Dr. Ingrid Fritsch

Kolawole Ayinuola

227th Electrochemical Society Meeting May 24-28 in Chicago, IL


1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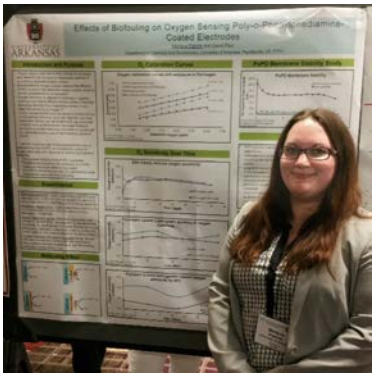
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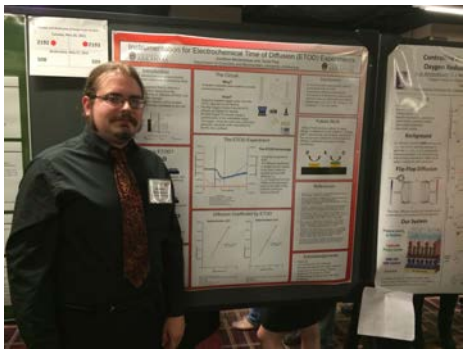
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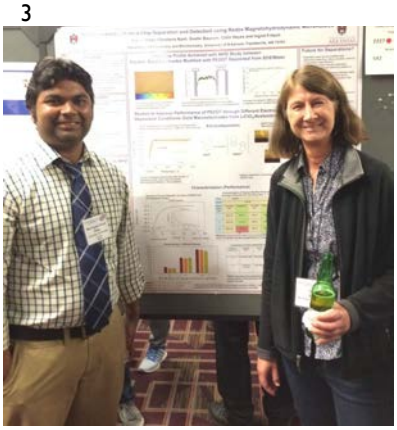
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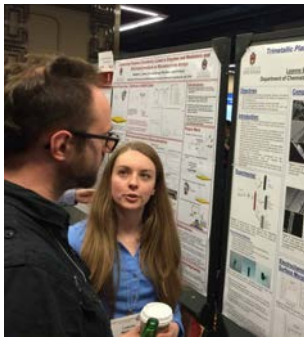
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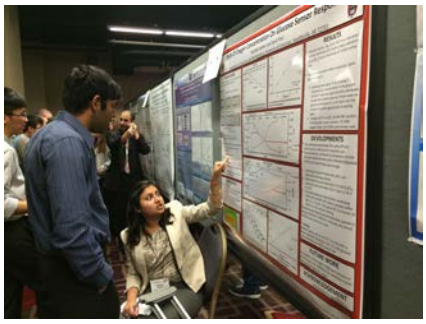
8

1 Fritsch group dining at Sofi's
2 Ben Jones
3 Marlena Patrick
4 Jonathan Moldenhauer
5 Mengjia Hu
6 Foysal Kahn
7 Leanne Mathurin
8 Nandita Halder

Milestones

Sita Nanthavong and **Jeremy Durchman** (class of awesome-06, boy wonder and advocate for bacon justice) are happy to announce the birth of their son, Alexander Erik Durchman (aka Moose, Bean, Cannonball, The A Train -- Daddy has most of the nicknaming duties) on April 28, 2015. Brothers Lennon (age 6) and Michael (age 7) enjoy their new responsibilities as positive role models and forces of morning awakening. They are very appreciative for the continued health as everyone adjusts to new things, like baths, which so far, have been met with positive results.

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CHAIR, WESLEY STITES
LESLIE JOHNSON, EDITOR

Mailing Address
CHEM 119
1 University of Arkansas
Fayetteville, AR 72701

Phone: 479-575-4601
Fax: 479-575-4049
Email: cheminfo@uark.edu

We're on the web!
Fulbright.uark.edu/departments/chemistry/
&
Department of Chemistry and Biochemistry *University of

Safety Tip:
by Bill Durham

Read your safety tips!!!! They can help you prevent a major accident.

Department of Chemistry and Biochemistry

Calendar of Events

June
5 KUAF/Fulbright Summer Chamber Music Series, Crystal Bridges Museum of American Art, 7-8 pm
13 NWA Juneteenth Celebration, Murphy Park in Springdale, 3-7 pm http://bit.ly/1Q9Ouyz
13-24 Baseball College World Series, Omaha
14 Flag Day
16 Samir Jenkins PhD Defense (CHEM 105, 10:30 am)
16 8-week summer session ends
21 Father's Day and first day of summer
26 Haibin Wu MS Defense (CHEM 201, 2-4 pm)
26 Kolawole Ayinuola PhD Defense (CHEM 105)
29 Second 5-week Session begins (6/29-7/31)

July
1 Application deadline for students who plan to graduate at the end of Summer
3 Independence Day Holiday (offices closed)
24 REU Meeting in Miniature

Fayetteville Farmers Market on the downtown square every Saturday in June and July

Department Unveils New Web Page

Office Manager **Heather Jorgensen** has worked closely with Ali Williams, Director of Creative Services for Fulbright College, to launch our new departmental web page, located at Fulbright.uark.edu/departments/chemistry/ There you will find links to departmental information, news, and people. But best of all, alumni can stay in touch through the Alumni & Friends link. We want our alumni to stay in touch! Please take a few minutes to browse the page and submit any update you'd like published (or not). We welcome pictures too!

ARKANSAS INBRE
IDeA Networks of Biomedical Research Excellence

Save the Date!

The 2015 INBRE conference will be held November 6-7 in Fayetteville, AR.

The department of chemistry and biochemistry at the University of Arkansas strives for excellence in research, teaching and service in chemistry - the central science. We aspire to positions of leadership regarding the discovery of new scientific knowledge, the training of students, and the economic development of the State of Arkansas. We seek to recruit and retain a diverse group of the best faculty, students and staff to address the challenges of the future through interdisciplinary and multi-disciplinary research and education.

Library Hours

CHBC Library (CHEM 225)
http://libinfo.uark.edu/chemistry

Regular Summer Hours: May 24 - August 1

Regular Summer Hours	
Saturday and Sunday	CLOSED
Monday – Thursday	8:00 am – 6:00 pm
Friday	8:00 am – 5:00 pm
Exceptions to Regular Summer Hours	
Monday, May 25 (Memorial Day)	CLOSED
Thursday, July 2	8:00 am - 5:00 pm
Friday - Saturday (July 3-4)	Closed
Intersession and Interim Hours: August 2-23	
M-F	8:00 am - 5:00 pm
Saturday and Sunday	CLOSED

The chemistry and biochemistry library resources can be accessed in the following LibGuides: http://uark.libguides.com/content.php?pid=110953. Please bookmark for future use.
Theses and dissertation resources can be found on the following LibGuide: http://uark.libguides.com/content.php?pid=123035 &sid=1057466.